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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/710,058	ANDERSON ET AL.	
	Examiner	Art Unit	
	Sue Liu	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Status

1. Claims 1-3, and 20-22 are currently pending and are being examined in this application.

Priority

2. This application claims priority to U.S. Provisional Patent Application Nos. 60/164,592, filed 11/10/1999, as previously acknowledged in the Office action mailed 3/22/06.

Specification

3. Applicant's amendment (filed 7/24/06) to the specification to remove the hyperlinks in the instant disclosure is acknowledged and entered.

Claim Rejections Withdrawn

4. Upon further consideration, and in light of applicants' arguments, the following claim rejections as set forth in the previous Office action are withdrawn:

Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Outstanding Objection (s) and/or Rejection (s)

Claim Rejections - 35 USC 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1- 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bryan** et al. US Pat. No. 6,232,107 (5/01: filed 10/98 or earlier) with attached Result 4 DATABASE Alignment search and **Aran** et al. Cancer Gene Therapy, Vol. 5, No. 4 pages 195-206 (1998). The previous rejection is maintained for the reasons of record as set forth in the Office action, mailed 3/22/06.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over the obviousness rejections using **Aran** et al and **Bryan** et al. as applied to claims 1-3 and 20 above, and, if necessary, further in view of Zolutukhin et al. US Pat. No. 5,874,304 (2/99: filed 1/96). The previous rejection is maintained for the reasons of record as set forth in the Office action, mailed 3/22/06.

8. Claims 1-3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zolutukhin** et al. US Pat. No. 5,874,304 (2/99: filed 1/96) and **Bryan** et al. US Pat. No. 6,232,107 (5/01: filed 10/98 or earlier) with attached Result 4 DATABASE Alignment search. The previous rejection is maintained for the reasons of record as set forth in the Office action, mailed 3/22/06.

9. Claims 1, 3, and 20-22 are rejected under 35 U.S.C. 103(a) as being obvious over **Bierhuizen** et al (Biochemical and Biophysical Research Communications. Vol. 234: 371-375; 1997), in view of **Bryan** et al (US Patent 6,232,107; 2001; Filed 3/26/1999; priority date: 3/27/1998). The previous rejection is maintained for the reasons of record as set forth in the Office action, mailed 3/22/06.

10. Claims 1-3, and 20-22 are rejected under 35 U.S.C. 103(a) as being obvious over **Bierhuizen** et al (Biochemical and Biophysical Research Communications. Vol. 234: 371-375; 1997), in view of **Bryan** et al (US Patent 6,232,107; 2001; Filed 3/26/1999; priority date: 3/27/1998) and further in view of **Aran** et al (Cancer Gene Therapy. Vol. 5: 195-206; 1998). The previous rejection is maintained for the reasons of record as set forth in the Office action, mailed 3/22/06.

11. Claims 1, 3, and 20-22 are rejected under 35 U.S.C. 103(a) as being obvious over **Anderson** et al (PNAS. Vol. 93: 8508-8511; 1996), in view of **Bryan** et al (US Patent 6,232,107; 2001; Filed 3/26/1999; priority date: 3/27/1998). The previous rejection is maintained for the reasons of record as set forth in the Office action, mailed 3/22/06.

Discussion and Answer to Argument

Applicant's arguments have been fully considered but they are not persuasive for the following reasons (in addition to reasons of record).

Applicants have presented a general discussion for all of the outstanding rejections under 35 U.S.C. §103 (Applicant's Reply, entered 7/24/06, pp. 6-11), and arguments addressing each one of the rejections (pp. 11-14 of the Reply). Applicant's arguments in the general discussion are first addressed as the followings (Because applicant's arguments are similar to the previous argument entered 2/17/06, the reasons of records and answers to arguments from the previous Office action mailed 3/22/06 are incorporated by reference in their entirety):

Claim Interpretation:

First, applicants' overall arguments seem to rely on the successful use of the claimed retroviral vector, as reflected by applicants' statement of *"the art at the time of filing indicates a lack of a reasonable expectation of success in the using the claimed vector"(emphasis added). (Reply entered 7/24/06, p. 6, last para).*

However, the instant claims are drawn to products but not methods. In order to clarify the issue, the following claim interpretation is needed:

The instant Claim 1 recites "a retroviral vector comprising a polynucleotide encoding a green fluorescent protein (GFP) having the amino acid sequence of SEQ ID No:2." To simplify, the claim is drawn to a retroviral vector comprising a polynucleotide. The claim language also limits that the said polynucleotide encodes for a specific GFP, whose amino acid sequence comprises of SEQ ID No:2. Thus, the scope of the instant claims encompasses any polynucleotide (DNA sequences) that encodes for the amino acid sequence of SEQ ID No:2. As discussed in the previous Office action (7/8/2003, pp. 12-13, especially the bridging para), the specific amino acid sequence recited in SEQ ID NO:2 is an exact match to the wild-type amino

acid sequence for a *Renilla* GFP, and the encoding polynucleotide sequence is also known, which fact has not been contested by applicants.

The instant Claim 1 and its dependent Claims (2, 3, and 20) do not recite any method of using the said retroviral vector. The said claims are only drawn to the products of "a retroviral vector" and "a mammalian cell".

Similarly, the instant Claims 21 and its dependent Claim 22 are drawn to a product of a mammalian cell comprising the said retroviral vector. Although the instant Claims 21 and 22 recite intended use of the claimed product such as detection of fluorescence and assaying test agents, these said intended uses do not provide structural limitations to the claimed product.

General Discussion of Prior Art:

Applicants agree with the Office in terms of the following facts from the prior art as stated in the Reply, entered 7/24/06, p. 6, last para):

I. The amino acid sequence of wild-type Renilla GFP was known prior to filing of the instant application. Because the amino acid sequence of the instant SEQ ID No:2 is an exact match to the wild-type amino acid sequence for a *Renilla* GFP as discussed above, it logically follows that the amino acid sequence of SEQ ID No:2 is known in the art prior to filing of the instant application. It also follows that the polynucleotides encoding for the said wild-type Renilla GFP are also known in the art because one of ordinary skill in the art would be able to derive the nucleic acid sequence from the amino acid sequence, as evidenced by Bryan et al (US 6,232,107; SEQ ID Nos 15-16).

II. Retroviral vectors containing altered *Aequoria* GFP were well known and had been successfully used prior to filling of the instant application.

III. The superior spectral properties of wild-type *Renilla* GFP were well known prior to filing the instant application.

Even before detailed analysis of the prior art's teachings, the above discussion would logically lead to the conclusion that it would have been prima facie obvious for a person of ordinary skill in the art to make a retroviral vector comprising a polynucleotide that encodes for the wild-type Renilla GFP, i.e. encodes for the amino acid sequence of the instant SEQ ID No:2. It is undisputed by the applicants that retroviral vectors comprising GFP (altered), wild-type *Renilla* GFP amino acid sequence (SEQ ID No:2), and polynucleotides encoding for wild-type *Renilla* GFP are all known in the prior art. Applicants have pointed out that "the superior spectral properties of wild-type *Renilla* GFP were well known prior to filing" of the instant application as discussed above, which provides ample motivation for one of ordinary skill in the art to construct

a retroviral vector comprising a polynucleotide that encodes for the wild-type Renilla GFP with superior spectral properties. Contrary to applicant's assertion, the prior art does not teach away from wild-type Renilla GFP (wild-type amino acid sequence) as demonstrated by applicant's admission of the prior art's teaching discussed above.

Applicants arguments are mainly drawn to the following points:

I. *Applicants mainly argue that the "reasonable expectation of success" has not been demonstrated for the obviousness rejections. Applicants specifically argue that "the art at the time of filing indicates a lack of a reasonable expectation of success in the using the claimed vector"(emphasis added). (Reply entered 7/24/06, p. 6, last para). Applicants state that "the question here, however, is not whether one of skill in the art could make the claimed vector with a reasonable expectation of success. Rather the question is whether one of skill in the art would use the claimed vector with a reasonable expectation of success." (pp. 9-10, bridging para).*

II. *Applicants also argue that the cited references teach away from the claimed invention. (Reply entered 7/24/06 p. 9, para 3).*

III. *Applicants also argue that the examiner's position on the prior art's teachings is inconsistent. (Reply entered 7/24/06, p. 10, 4-7).*

Contrary to applicant's argument, the "question" here is precisely the "making" of the claimed vector not the intended use of the vector because the instant claims are drawn to products not methods of using as discussed above. The "use" of the claimed vector is not recited in the instant claims 1-3, and 20. Although the instant Claims 22 and 23 recite intended uses for the claimed products, the intended use recitations do not provide additional structural limitation to distinguish the claimed product from prior art references.

In response to applicant's argument that the use of the claimed product of a retrovirus vector comprising a polynucleotide encoding for a GFP with amino acid sequence of SEQ ID

No: 2, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The instant claims are directed to a "retroviral vector", which is essentially a polynucleotide vector that comprises various elements (nucleic acid sequences). The question of whether the inserted GFP gene expresses or not is not relevant for the discussion concerning the making of the vector itself. The prior art (e.g. Aran et al) had shown that a "retroviral vector" (a polynucleotide sequence) comprising a GFP was made and verified. The prior cited 103 references (such Aran) also showed the it is well known in the art that one can insert different sequences in such vectors. Since Bryan et al teach the wild-type amino acid sequence of a Renilla GFP (and its coding polynucleotide sequence) and its insertion in different vectors, it would have been obvious to one of ordinary skill in the art to generate a "retroviral vector" comprising that specific GFP gene sequence regardless whether the vector when transfected into mammalian cell would express or not. There would be reasonable expectation to achieve such a vector (i.e. a DNA construct comprising the GFP sequence) successfully, because the technique for generating such a vector is known and routine in the art as taught by the prior art in the 103 rejections. Since Applicants have not shown how the claimed retroviral vector is structurally and/or functionally different from the prior art, or how the vector construct is non-obvious over the prior art teachings, the 103 rejections against Claims 1, 2, 20, 21 and 22 are maintained.

Applicants have cited the Hanazona, the Cheng, and the Levy references (collectively referred to as the "supporting references" by applicants) to show that a retroviral vector comprising a wild-type GFP would not work (i.e. no detectable fluorescence in a retroviral-mammalian gene expression system). Second, applicants argue that the prior art teach that wild-type GFP cannot be expressed in a retroviral-mammalian gene expression system citing several references indicating the fact. Applicants argue that the references (Hanazona, Cheng, and Levy) teach that fluorescence was undetectable from mammalian cells comprising GFP retroviral constructs (Reply entered 7/24/06, p. 8, especially the footnotes). In order to answer applicants' argument, the following analysis of the cited references are provided:

Overall, all the references cited by the applicants to argue for unexpected results are drawn to *Aequoria* GFP but not *Renilla* GFP as discussed in the previous Office actions mailed 3/22/06. Applicants argue that Aequoria wildtype GFP cannot be expressed in a retroviral-mammalian gene expression system. However, applicants' claim to unexpected result is for the *Renilla* wildtype GFP. The state of the art at the time of the invention was made does not teach that Renilla wildtype GFP is incompatible with the retroviral mammalian gene expression system. Therefore, the cited references do not provide support for the unexpected results claimed for Renilla wildtype GFP since the GFPs are from two different species.

Contrary to applicants' assertion, this view point is not in conflict with the 103 art rejections set forth by the previous Office action. The art rejections are based on analysis of obviousness, where the Bryan et al reference teaches that the wild-type Renilla GFP is strongly preferred over the Aequorea GFP due to the analytical problems presented in the latter (see the Office action mailed 3/22/06, p. 4, last para). This provides strong motivation for one of

ordinary skill in the art at the time of the invention was made to use Renilla GFP instead of Aequorea GFP in a retroviral-mammalian gene expression system.

Hanazona The reference teaches construction of a retroviral vector for the mammalian expressing of **Mutant** *Aequoria* **GFPs**. Applicants have maintained that the claimed SEQ ID No2 is drawn to the **wild-type** Renilla GFP (Applicant's Reply entered 2/17/06, p. 4, para 3) and the cited references have shown that the wild-type GFP is incompatible with the retroviral-mammalian gene expression system, and therefore the 103 rejections can be overcame because there are unexpected results from the instant invention. Since the Hanazona reference only teaches a mutant form of GFP, it is irrelevant to applicants' argument of unexpected results. Furthermore, although the reference does teach that no stable cell lines expressing GFP were produced, the reference teaches that a retroviral vector comprising a GFP (mutant form) was successfully produced, and the mutant GFP containing retroviral vector was successfully introduced into mammalian cells (Page 1316, para 1). The reference teaches that "fluorescence of cells transfected with the GFP-containing plasmids was observed..." (Page 1316, para 1, line 2), which shows that the mutant GFP containing viral vector was successfully introduced into the mammalian cells and mutant GFP was indeed expressed regardless how long the transfected cell lived.

Levy The reference teaches constructing retroviral vector comprising different forms (wildtype and mutant) of *Aequoria* GFP and transduction into mammalian cells. The "wildtype" GFP taught by the reference refers to "wildtype" both in terms of amino acid sequence and nucleic acid sequence. For example, the reference teaches that the "wildtype GFP gene without red-shift mutation or codon modifications" (emphasis added) exhibited little (when transiently

transfected) or no (stable transfection) fluorescence (See Table 1 and Caption). The reference further teaches that with "humanization" (human codon usage) and a single amino acid mutation, the GFP was successfully expressed and intense fluorescence was observed. The conclusion quoted by applicants stating that "wildtype GFP could never be visualized" (p. 613, 1st paragraph of the Levy reference; Applicant's Reply entered 7/24/06, p. 8, Footnotes) is referring to a wildtype *Aequoria* GFP both in its coding sequence and amino acid sequence. The reference also teaches that several studies have discovered that by humanizing the wildtype codons (Levy, p. 610, right col., para 2), wild-type GFP (in term of protein sequence) can be successfully expressed in mammalian cells. The conclusion of this reference does not particularly indicate that wildtype (in term of amino acid sequence) is incompatible with retroviral-mammalian expression system. The reference, however, does provide motivation to utilize humanized GFP coding nucleic acid sequence for construction of a retroviral vector to be used in a mammalian gene expression system.

Cheng The reference teaches expressing various forms of *Aequoria* GFP in mammalian cells using different expression vectors (transient and retroviral vectors). Similar to the Hanazono reference, the Cheng reference teaches retroviral vector comprising mutant form of GFP (in term of amino acid sequence) that was transduced into mammalian cells (See Figure 2 and p. 607, left col., para 2). The reference teaches that the wildtype GFP gene (nucleic acid sequence) was used to construct a transient mammalian expression vector (not a retroviral vector) (See p. 606, right col., last paragraph). The reference further teaches that the wildtype GFP gene expressed in the transfected mammalian cells (See Figure 1) as analyzed by FACS. Contrary to applicants' interpretation, the reference does not teach that the wildtype GFP is

incompatible with mammalian gene expression system, but the wildtype and mutant GFP "are stable and properly processed to form functional fluorophores." (p. 608, right col., lines 1-5 under Discussion). The reference further teaches that the "Expression of GFPs, either transiently or stably, are not detrimental to host cells."

Therefore, the references cited by the applicants do not provide support for applicants' arguments of unexpected result, teaching away, and lack of reasonable expectation of success. These references, however, do provide ample evidence to show that various forms of GFP (including both wildtype and mutant forms) can be successfully inserted into a retroviral vector and/or expressed in mammalian cells. These references also provide motivations to humanize (alter wildtype GFP gene to have human codons) wildtype GFP gene for expression in mammalian cells. These references have demonstrated that expressing GFPs in mammalian cells (using various expression vectors such as retroviral vector) is highly feasible and successful, which would provide motivations for one skilled in the art to generate mammalian gene expression system with different GFPs (derived from different sources or mutant forms), especially of wild-type Renilla GFP because its' "superior spectral properties" as acknowledged by the applicants (Reply entered 7/24/06, p. 6, last para).

In combination with the "general discussion" of the rejection under 35 U.S.C. § 103, applicants also briefly traversed each one of the 103 rejections individually. Applicants' arguments are addressed as the followings:

Rejection over Bryan and Aran:

Applicants mainly argue that the Aran reference discloses at page 204 of the reference "a retroviral vector encoding a wild-type *Aequoria* GFP was introduced into in a mammalian cell, fluorescence was **"undetectable"**. As such, Aran's disclosure, itself, teaches that the combination of Bryan and Aran would produce "a seemingly inoperative" vector." [*sic*]

Similar to the discussion above, applicants are basing the lack of "reasonable expectation of success" on the intended use of the claimed product. The "wild-type Aequoria GFP" referred to by the Aran reference is wild-type both in terms of the amino acid sequence and the encoding polynucleotide sequence. The reference also teaches that the humanized (in terms of the polynucleotide codons) GFP have exhibit higher fluorescent activity (Aran, p. 204, left col., para 2). More importantly, the reference teaches the successful generation of a retroviral vector comprising a polynucleotide encoding for the wild-type GFP (Aran, p. 196-197). Thus, the reference does not teach that a retroviral vector comprising a polynucleotide encoding for the wild-type Renilla GFP cannot be made.

Rejection over Aran, Bryan and Zolutukhin:

Applicants traversed this rejection with the same argument as the above rejection.

Rejection over Zolutukhin and Bryan:

Applicants traversed this rejection by referring to the "general discussion" section of the Reply entered 7/24/06. Applicants' arguments in the "general discussion" section are answered above.

Rejection over Bierhuizen and Bryan:

Applicants traversed this rejection by referring to the "general discussion" section of the Reply entered 7/24/06. Applicants' arguments in the "general discussion" section are answered above.

Applicant's further traversed this rejection by the following arguments:

1. Although Bierhuizen teaches "successful use of a retroviral vector encoding a wild-type *Aequoria* GFP", the Bierhuizen is "only a single reference in a field in which many others report repeated failure." (Reply, p. 13, para 1)

2. "Bierhuizen fails to report stable cell lines that express wild-type Aequoria GFP."

As discussed above, the "supporting references" cited by applicants do not indicate failure of generating a retroviral vector encoding a wild-type Aequoria GFP." Furthermore, the success of Beirhuizen would invite or motive one of ordinary skill in the art to experiment with wild-type GFP by generating retroviral vectors comprising polynucleotides encoding for wild-type GFP.

Applicant's second argument is based on a feature (i.e. stable cell lines) that is not recited in the instant specification. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., stable cell line expressing wild-type Aequoria GFP) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Rejection over Bierhuizen, Bryan and Aran:

Applicants traversed this rejection with the same arguments as the above rejections regarding the Aran and Bierhuizen references.

Rejection over Anderson and Bryan:

Applicants pointed to the following teachings of the Anderson reference to show that the combination of Anderson and Bryan would produce a "seemingly inoperative vector":

1. "Anderson states in the background section that suboptimal excitation spectra of wild type GFP "*precludes the detection of wtGFP* when a single copy of the gene is stably integrated".

2. "in the first paragraph of the result section, with reference to a population of cells infected with a retroviral vector encoding wild type Aequoria GFP, states "the difference in *fluorescene was not sufficient* to resolve infected from uninfected cells" *[sic]*

Overall, the above two points are all based on the intended uses argument presented by applicants. The first citation from the Anderson reference is pointing out a problem with the detection of wtGFP when there is only a singe copy of the gene in mammalian cells. It is not referring to a problem associated with the wild-type GFP.

The second citation is directed toward using of mammalian cells comprising wild-type GFP. Applicants' conclusion of "the combination of Anderson and Bryan would produce a seemingly inoperative vector" based on this citation of the reference seems to be unfounded. In

the same paragraph pointed out by applicants (Anderson, p. 8509, left col., para 4), the reference teaches wild-type GFP fluorescence can be detected by FACS in mammalian cells stably incorporating the wild-type GFP using retroviral vectors (comprising polynucleotides encoding for wild-type GFP). This reads on the intended use recitations of Claims 21 and 22. Overall, not only does the Anderson reference demonstrate the success of generating retroviral vector comprising polynucleotides that encode for wild-type GFP, but the reference also demonstrate the successful generation of mammalian cells comprising the said retroviral vector.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Liu whose telephone number is 571-272-5539. The examiner can normally be reached on M-F 9am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached at 571-272-4517. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 1639
9/27/2006

MARK SHIBUYA, PH.D.
PATENT EXAMINER